

OPTICAL ALIGNMENT FOR A MULTI-MIRROR TELESCOPE

ABSTRACT:

A primary mirror 22 defines an active concave surface 24, a first planar 40 and a first concave 42 alignment surfaces, each facing an active surface 30 defined by a secondary mirror 28. The secondary mirror also defines a second planar 46 a second concave 48 alignment surfaces, each opposite the active surface 30. Alignment beams 64, 66, 68, 70 are reflected from each of the four alignment surfaces, which all face the same direction, to adjust the mirrors. The first planar alignment surface is used to adjust tip and tilt of the primary mirror; the first concave alignment surface is used to position a retro reflector 50 relative to the primary mirror; the second planar alignment surface is used to adjust tip and tilt of the second mirror, and the second concave alignment surface is used to adjust the second mirror in the x, y and z direction relative to the first mirror. The apparatus and method are described for two and three mirror telescopes.

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